

CCCGGGCCCCGGCCGCCGTCGGACCCCGTGGCCACCGCCGCCGGCGACCGAG
 GGACCCGCCGCCGCCGCGCTGCCGACCTAGAGGATCAAGTCATAATGGGAGCATTAGACAAGCC
 AAAGATGGAGAAGCATAATGCCAGGGCAGGGAAATGGGTTACGATACGGCCTAACGAGCATGCAAGGT
 TGGCGAGTTGAAATGGAGGACGCACACACGGCTGTGATCGGTTGCCAAGTGGACTTGAGACATGGTCAT
 TCTTTGCTGTATATGATGGGCATGCTGGTTCTCAGGTTGCCAATACTGCTGTGAGCAGTTGTTAGATCA
 CATACCAATAACCAGGATTTCAGAGGATCTGCAGGAGCACCTCTGTGGAGAACGTAAGAATGGAATC
 AGAACAGGGTTCTGGAGATTGATGAACACATGAGAGTTATGTCAGAGAACATGGTGAGATAGAA
 GCGGGTCAACAGCTGTGGCGTCTTAATCTCTCCCAACATACTTATTCATTAACGTGGAGACTCGAG
 AGGTTACTTGTAGGAATAGAAAAGTTCACTTCTTCACACAAGACCATAAACCAAGTAACCCGCTGGAA
 AAAGAACGAATTCAAGATGCAGGGGGCTCGGTGATGATTAGCAGCTGCAATGGCTCTGGCTGTATCGA
 GGGCCCTGGGGATTTCGATTACAAATGTGTCATGGAAAAGGTCCCACAGAGCAGCTGTCTCCCCAGA
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 TGGGACGTCATGGGAACGAAGAGCTCTGTGACTTGTGAGATCCAGACTTGAAGTCAGTGATGACCTTG
 AGAAAAGTTGCAATGAAGTAGTCGACACCTGCTTGTATAAGGGAAAGTCGAGACAACATGAGTGTGATTT
 GATCTGTTTCCAAGTGCACCCAAAGTCTCGGAGAGGCGGTGAAGAAGGAGGCGGAGCTGGACAAGTAC
 CTGGAGAGCAGAGTAGAAGAAATCATAAAGAACGAGGTGGAAGGCGTCCCTGACTTAGTCCACGTGATGC
 GCACGTTAGCCAGTGAGAACATCCCCAGCCTCCACCAGGGGTGAATTGGCAAGCAAGCGGAATGTAAT
 TGAAGCCGTTACAATAGACTGAACCCCTACAAAAATGACGACACTGATTCTGCGTCAACCGATGATATG
 TGGTAAAGCCGCTCACCCAGCCGTGGACTCACCTCGCCTGCAAAGGGAAAGCCAGCTCATCCTTGCCGA
 GCCTTACCATCCATCACCGACTTCACAGGAGGGCTGACACGGGTGAGGACTGCAG (SEQ NO:1)

MGAFLDKPKMEKHNAQQQNGNLRYGLSSMQGWRVEMEDAHTAVIGLPSGLETW
 SFFAVYDGHAGSQVAKYCCEHLLDHITNNQDFRGSAGAPSIVENKNGIRTGFLEID
 EHMRVMSEKKHGADRSGSTAVGLISPQHTYFINCGDSRGLLCRNRKVHFFTQDH
 KPSNPLEKERIQNAGGSVMIQRVNGSLAVSRALGDFDYKCVHGKGPTEQLVSPEPE
 VHDIERSEEDDQFIIACDGIWDVMGNEELCDFVRSLEVTDDLEKVCNEVVDTCL
 YKGSRDNMSVILICFPSAPKVSAAEVKKEAELDKYLESRVEEIKKQVEGVPDLVH
 VMRTLASENIPSLPPGGELASKRNVIEAVYNRLNPYKNDDTDSASTDDMW (SEQ
 ID NO:2)

FIGURE 1

underlined = deleted in targeting construct

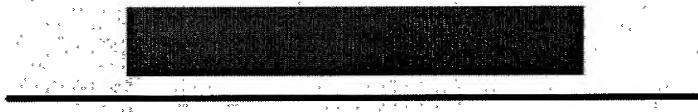
[] = sequence flanking Neo insert in targeting construct

CCCGGGCCCCGGCCGCCGTGCGGGACCCGTGCCCGGCCGTGCCACCGCCGCCCG
 GCCGACCGAGGGACCCGCCGCCGCCGGCTGCCGG [ACCTAGAGGATCAAGTCATAATG
 GGAGCATTAGACAAGCAAAGATGGAGAAGCATAATGCC] AGGGGCAGGGGAATGGG
TTACGATAACGGCTAACGAGCATGCAAGGTTGGCGAGTTGAAATGGAGGACGCACACAG
GCTGTGATCGGTTGCCAAGTGGACTTGAGACATGGTCAATTCTTGCTGTATATGATGGG
CATGCTGGTTCTCAGGGTGC~~AAAATA~~ [CTGCTGTGAGCAGTGTAGATCACATCACCAAT
 AACCAAGGATTTCAGAGGATCTGCAGGAGCACCTCTGTGGAGAACGTTAAAGAATGGAATC
 AGAACAGGGTTCTGGAGATTGATGAACACATGAGAGTTATGTCAGAGAACATGGT
 GCAGATAGAACGGGTCAACAGCTGTGGCGCTTAATCTCTCCCCAACATACTTATTC
 ATTAACGTGGAGACTCGAGAGGTTACTTGTAGGAATAGAAAAGTTCACTCTTCACA
 CAAGACCATAAACCAAGTAACCCGCTGGAAAAAGAACGAATTCAGAACATGCAGGGGCTCG
 GTGATGATTCAAGCGTGTCAATGGCTCTGGCTGTATCGAGGGCCTTGGGATTCGAT
 TACAAATGTGTCCATGG] AAAAGGTCCCACAGAGCAGCTGTCTCCCCAGAGCCCAGTC
 CATGATATTGAAAGGTCTGAAGAACATGACCAGTTCATCATCCTGCATGCGATGGCATC
 TGGGACGTATGGGAACGAAGAGCTCTGTGACTTGTGAGATCCAGACTTGAAGTCACT
 GATGACCTTGAGAAAGTTGCAATGAAGTAGTCGACACCTGTTGTATAAGGGAAAGTCGA
 GACAACATGAGTGTGATTGATCTGTTCCAAGTGCACCCAAAGTCTCGGCAGAGGCG
 GTGAAGAAGGAGGCGGAGCTGGACAAGTACCTGGAGAGCAGAGTAGAACGAAATCATAAAG
 AAGCAGGTGGAAGGCCTGACTTAGTCCACGTGATGCGCACGTTAGCCAGTGAGAAC
 ATCCCCAGCCTCCACCAGGGGTGAATTGCAAGCAAGCGGAATGTAATTGAAGCCGTT
 TACAATAGACTGAACCTTACAAAAATGACGACACTGATTCTCGCTCAACCGATGATATG
 TGGTAAAGCCGCTCACCCAGCCGTGGACTCACCTCGCTGCAAAGGGGAAGCCAGCTCA
 TCCTGCCAGCCTTACCATCCACCGACTCACAGGAGGGCTGACACGGGTGAGG
 ACTGCAG

FIGURE 2A

Gene Sequence Structure
* 164 bp Sequence Deleted 326 bp

Size of full-length cDNA: 1387 bp



Targeting Vector* (genomic sequence)

Construct Number: 2639

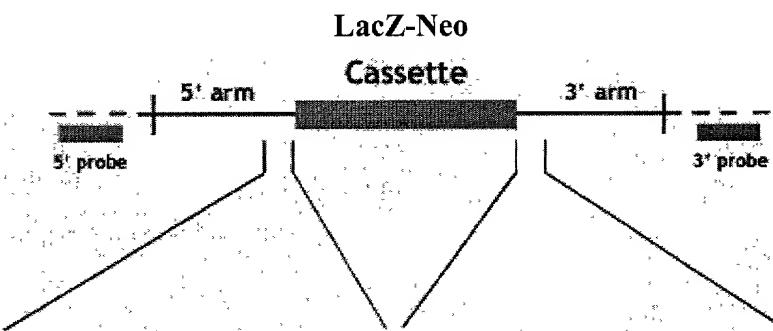
Arm Length:

5': 2.5 kb

3': 4 kb

Targeting Vector
- - - - Endogenous Locus

* Not drawn to scale



5' >GCAACACAATGCTTGTAGGTA
TAGCCTGTGAGTTTTCCAGCTTC
CTTGATCTTATAGATTCTGGTA
AAGAGTGGACATGTTTGT
CAAAGGCAATCACTTATTTCTTA
TTTCTCTCTTACAGACCTAGA
GGATCAAGTCATAATGGGAGCATT
TTTAGACAAGCCAAGATGGAGAA
GCATAATGCC<3' (SEQ ID
NO : 3)

5' >CTGCTGTGAGCACTGTGTTAGA
TCACATCACAATAACCAGGATTT
CAGAGGATCTGCAGGAGCACCTTC
TGTGGAGAACGTAAGAATGGAAT
CAGAACAGGTTCTGGAGATTGA
TGAACACATGAGAGTTATGTCAGA
GAAGAAACATGGTGCAGATAGAAG
CGGGTCAACAGCTGTGGCGTCTT
AATCTCTCCCC<3' (SEQ ID
NO : 4)

FIGURE 2B